CLAIMS

1. Method for coating the internal wall of a pipeline with a protective film comprising the formation of said protective film starting from at least one latex, characterized in that said latex, diluted to a solids content of 20% in demineralized water, exhibits a conductivity of less than 1.3 mS/cm.

2. Method according to Claim 1, characterized in that said latex, diluted to a solids content of 20% in demineralized water, exhibits a conductivity of less than 1 mS/cm.

3. Method according to Claim 1 or Claim 2, characterized in that said latex, diluted to a solids content of 20% in demineralized water, exhibits a conductivity of less than 0.9 mS/cm.

4. Method according to Claim 1 or Claim 2, characterized in that said pipeline is intended for supplying water, the latter having a temperature of less than approximately 30°C, preferably of less than or equal to approximately 20°C.

5. Method according to Claim 3, characterized in that said pipeline is intended for supplying drinking water.

6. Method according to any one of Claims 1 to 4, characterized in that said pipeline is made of metal.

7. Method according to Claim 5, characterized in that said pipeline is made of lead.

8. Method according to any one of Claims 1 to 7, characterized in that the latex is formed by polymerization or copolymerization of ethylenically unsaturated monomers chosen from styrene and its derivatives, butadiene, chloroprene, (meth)acrylic esters, vinyl esters and vinyl nitriles.

9. Method according to any one of Claims 1 to 8,

characterized in that said monomer is chosen from esters of acrylic acid or of methacrylic acid with hydrogenated or fluorinated C_1-C_{12} alcohols.

10. Method according to Claim 9, characterized in that said monomer is chosen from methyl acrylate, ethyl acrylate, propyl acrylate, n-butyl acrylate, isobutyl acrylate, 2-ethylhexyl acrylate, t-butyl acrylate, methyl methacrylate, ethyl methacrylate, n-butyl methacrylate and isobutyl methacrylate.

11. Method according to any one of Claims 1 to 8, characterized in that said monomer is a C_3-C_{12} vinyl nitrile.

12. Method according to any one of Claims 1 to 7, characterized in that the latex is formed by polymerization or copolymerization of ethylenically unsaturated monomers chosen from:

- vinyl esters of carboxylic acids,
- vinyl halides,
- ethylenic unsaturated mono- and dicarboxylic acids and the monoalkyl esters of the dicarboxylic acids with C_1-C_4 alkanols and their N-substituted derivatives,
- amides of unsaturated carboxylic acids,
- ethylenic monomers comprising a sulfonic acid group and its alkali metal or ammonium salts,
- amides of vinylamine,
- unsaturated ethylenic monomers comprising a secondary, tertiary or quaternary amino group or a nitrogen-comprising heterocyclic group,
- zwitterionic monomers,
- monomers which make possible crosslinking during use, for example by the chemical, thermal or photochemical route,

said ethylenically unsaturated monomers being used alone or copolymerized with monomers chosen from styrene and its derivatives, butadiene, chloroprene,

(meth)acrylic esters, vinyl esters and vinyl nitriles.

13. Method according to any one of Claims 1 to 7, characterized in that the latex is formed by polymerization or copolymerization of monomers of food grade.

14. Method according to any one of Claims 1 to 8, characterized in that the monomers used to form the latex are chosen from acrylic acid and its derivatives, methacrylic acid and its derivatives, and styrene and its derivatives.

15. Method according to any one of Claims 1 to 14, characterized in that said latex comprises a polymer or a copolymer having a film-forming temperature of between 0°C and 20°C.

16. Method according to any one of Claims 1 to 15, characterized in that said latex comprises a polymer or a copolymer having a glass transition temperature (T_g) of less than 20°C.

17. Method according to any one of Claims 1 to 16, characterized in that said latex comprises a polymer or a copolymer having a glass transition temperature (T_g) of between 0 and 10°C.

18. Method according to any one of Claims 1 to 17, characterized in that the diameter of the latex particles is between 10 nm and 5 μm, preferably between 100 and 300 nm.

19. Method according to Claims 1 to 18, characterized in that said latex has a level of solids of greater than or equal to 20%, preferably of 30 to 50%.

20. Method according to Claims 1 to 18, characterized in that said latex has a level of coagulum of less than 10%, preferably of less than 0.1%.

21. Method according to any one of Claims 1 to 19, characterized in that the latex, prior to the use thereof in forming a film, is subjected to a purification

treatment intended to reduce the concentration of water-soluble constituents in said latex.

22. Method according to Claim 21, characterized in that the purification treatment is carried out by dialysis and/or ultrafiltration.

23. Method according to either one of Claims 21 and 22, characterized in that said latex, on conclusion of this treatment, exhibits a concentration of water-soluble constituents which is less than that of the latex obtained on conclusion of the polymerization or of the copolymerization.

24. Method according to any one of Claims 1 to 23, characterized in that it comprises the following stages:

- a pipeline is filled using a latex,
- said pipeline is emptied, so as to allow the excess latex to flow out and to form a layer of latex on the internal wall of the pipeline,
- the layer of latex is heated, so as to form the protective film on the internal wall of said pipeline.

25. Method according to Claim 24, characterized in that the filling of the pipeline is carried out at ambient temperature.

26. Method according to Claim 24 or Claim 25, characterized in that the layer of latex is heated at a temperature of the order of 30 to 80°C.

27. Method according to any one of Claims 1 to 26, characterized in that the internal wall of said pipeline is coated with several superimposed films of latex.

28. Method according to Claim 27, characterized in that each of the films of latex is applied after drying the preceding film.

29. Method according to Claim 27 or Claim 28, characterized in that each of the films has a thickness of between approximately 50 and 500 µm, preferably 100 to 250 µm.

30. Method according to any one of Claims 27 to 29, characterized in that the internal wall of said pipeline is coated with two superimposed films of latex.

31. Method according to any one of Claims 25 to 30, characterized in that the filling of the pipeline is carried out under pressure.

32. Method according to Claim 31, characterized in that said pressure is of the order of 2 to 50 Pa.

33. Method according to one of Claims 6 to 32, characterized in that said pipeline is, prior to the coating of its internal wall, subjected to a treatment using an acid.

34. Method according to Claim 33, characterized in that said treatment is carried out using orthophosphoric acid.

35. Use of at least one latex for forming a film intended for the coating of the internal wall of a pipeline for reducing or stopping the release of one or more constituents of the material of said pipeline into a liquid carried by this pipeline.

36. Pipe or portion of pipe, characterized in that its internal wall is coated with a film obtained from at least one latex, said latex exhibiting a conductivity of less than 1.3 mS/cm, when it is diluted to a solids content of 20% in demineralized water.

37. Pipe or portion of pipe according to Claim 36, characterized in that said coating is capable of being carried out by the method according to any one of Claims 1 to 34.